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ABSTRACT

While the descriptive features of anorexia nervosa are well known and agreed upon, the level of personality organization and the character style of anorexia patients is more controversial. To study and compare the cognitive style and personality functioning of anorectic patients with that of conduct disordered patients, 20 adolescent females (10 anorectic, 10 conduct disordered), with average or above average intelligence, completed cognitive and projective psychological tests, 3 to 5 months following admission to a hospital treatment program. An analysis of the results showed that although both groups had high numbers of neuropsychological deficits, neither group was homogeneous in the kind of personality disorder. Cognitive difficulties were found in 6 out of the 10 anorexia records, and in only 3 out of the 10 conduct disordered records. As a group, the anorectic subjects did relatively poorly on recall of past or school-related learning and had difficulty in abstract reasoning and integration of new learning. On the unstructured Rorschach test, both groups showed lapses in ability to assess external reality, emotional concerns, developmental pathologies, and depressive images. However, the depressive responses of the anorectic subjects were followed by affective images, whereas the depressive responses of the conduct disordered subjects were followed by aggressive images. The anorectic subjects differed most from the conduct disordered subjects in number of paranoid images and symmetry responses. Finally, a significant number of Rorschach records of the anorectic group had suicidal indicators. (BL)

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A COMPARISON OF THE PSYCHOLOGICAL EVALUATION OF ADOLESCENTS WITH ANOREXIA NERVOSA AND OF ADOLESCENTS WITH CONDUCT DISORDERS

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Abstract

Cognitive and projective psychological tests were administered to ten inpatient adolescents with anorexia nervosa and ten inpatient adolescents with conduct disorders. All subjects in the present study were female and all had at least average intelligence. Results indicate that there are high numbers of neuropsychological deficits in both groups, but that neuropsychological deficits are especially numerous in the anorexia group. The two groups showed striking similarities in terms of some psychological functions - e.g. in terms of overall reality testing ability. However, performance on psychological tests also revealed that some aspects of personality style in the two groups are significantly different. A surprising finding was that there were suicidal indicators on a significant number of the Rorschach records of the anorectic group.

INTRODUCTION

The descriptive features of anorexia nervosa are well known and generally agreed upon (APA, 1980). There is, however, controversy concerning level of personality organization and character styles of anorexia patients. It is assumed that any one anorexia patient may be schizophrenic, borderline or neurotic in terms of level of overall personality organization (Masterson, 1977). There are also many clinical reports concerning predominant personality styles of anorexia patients (Bruch, 1965, 1973,1979; Palazzoli, 1978.) Although some features of personality style have been identified, a great deal of confusion concerning personality style presists despite efforts to identify and study nonpsychotic groups of anorectics.

Some studies have utilized psychological tests to examine the personality characteristics of patients with anorexia nervosa. The bulk of these studies have employed various personality scales to assess predominant personality traits (Gomes and Dally, 1980; Pierloot et al., 1975; Pillay and Crisp, 1977; Smart et al., 1976). Findings from these studies suggest that there may be different subgroups of anorectics (e.g. hysteroid, obsessive, etc.,) Other studies have utilized more traditional psychological tests (such as the WAIS and Rorschach) in attempts to identify characteristic functioning of anorectic patients (Akitani, 1981; Akitani and Shimosaka, 1963; Bram etal., 1982; Thielgaard, 1965; Wagner and Wagner, 1978; See also Bruch, 1973; and Palazzoli,1978). Unfortunately the resulting reports have either

consisted of mainly descriptive data or have been based on uncontrolled studies involving very few subjects. Also, studies differ markedly in terms of the kinds of data they report. Furthermore, the results of these studies conflict as to whether anorectics produce many or few responses, whether anorectics' responses are affectively labile or tightly controlled, and whether their responses involve good or poor reality testing. There is still a need for the rigorous evaluation of well defined groups of anorectic patients.

The present study was a pilot effort to study and compare the cognitive and personality functioning of a group of hospitalized anorectic patients with that of a control group of hospitalized conduct disorder patients. Patients who were psychotic were excluded. Subjects were also matched for sex and were selected so that all subjects had at least average overall intelligence. The hypothesis of this study was that the two groups, because of their different symptoms and presumably different personality styles, would perform significantly differently with regard to many of the psychological functions measured by the tests. Because of the conflicting findings that exist in the psychological test literature involving patients with anorexia nervosa special efforts were made to identify characteristic learning styles and styles of emotional functioning in that group.

METHOD

Selection

All subjects in both groups of the present study were female adolescents of average intelligence or above. The ten anorexia patients in

the present study had been admitted consecutively to the Eating Disorders Unit at New York Hospital/Cornell Medical Center in 1980. The criteria used for the diagnosis of anorexia nervosa were defined by the second author and had been used in previous research (e.g. Halmi, et al., 1979.)

These criteria included:

1. Onset of the eating disorder symptoms before age 30 (in the present study before age 19).
2. Loss of enough weight to be at least 15% below normal weight for age and height.
3. Engagement in behavior that maintained the weight loss. This behavior could include self-induced vomiting, exercising, severe food restriction, and laxative abuse.
4. Expression of fear of becoming obese.
5. Presence of amenorrhea for at least three months prior to the time of the initial diagnostic interview.
6. No evidence of psychosis.

All anorexia patients met these criteria. However, the patients differed from each other in terms of other behavioral characteristics, and in terms of the severity and duration of illness (See Table 1).

The conduct disorder patients in the present study were ten adolescent females who were admitted to the adolescent unit and to a generic unit of the same hospital during the same time period in which the anorexia patients were treated. It was not possible to include consecutively admitted female adolescents with conduct disorders in the

present study because not all such patients met the selection criteria regarding overall intelligence.

The criteria for a diagnosis of conduct disorder included the presence of impulsive and antisocial behaviors (e.g. stealing, lying, truancy, running away, damage to property, assaultiveness, tantrums, promiscuity, substance abuse, etc.) Also, two of the following had to be present: severe impairments in interpersonal relationships, marked difficulties regulating mood and self-esteem, self-damaging acts and possibly the presence of psychotic episodes (usually precipitated by drug use or severe psychosocial stress). There were no eating problems in the acting-out group.

Psychological Tests

Psychological testing was conducted separately from clinical assessments. In order to rule out changes in psychological and neuropsychological functioning that may be starvation-based (Bruch, 1973), no anorexia patient was tested before she reached her predetermined target weight[a]. All anorexia patients reached target weights between two and five months following admission to the hospital and so were all tested between three and five months following admission. The conduct disorder patients were tested between two and five months following admission.

The psychological tests administered to all subjects included the WAIS, or WISC-R (depending on each subject's age), the Rorschach, the Thematic Apperception Test, the Bender Gestalt Test, Babcock Story Recall, Sentence Completion, Human Figure Drawings and the Wide Range

Achievement Tests. The Rorschach was administered using the Rappaport-Schafer system. All other tests were administered and scored according to the directions for each test (Jastak, et al., 1978; Rappaport, Gill and Schafer, 1945, 1946). All tests were administered by a junior postdoctoral fellow or staff psychologist under the supervision of a senior staff psychologist.

According to the clinical procedures of the hospital where these patients were tested additional neuropsychological tests were administered whenever any cognitive weaknesses were identified on the basic test batteries of individual subjects. The specific functions evaluated included verbal and visual memory, language skills, and visual-spatial, motor, and somatosensory functioning (Luria, 1966). Possible tests added to individual batteries included the Benton Visual Retention Test, the Wechsler Memory Test, Ravens Colored Progressive Matrices, The Purdue Pegboard Test and the Child and Adult Neuropsychological Screening Batteries (based on the Luria method, 1966) that were developed for use at New York Hospital/Cornell Medical Center (See also Heilman and Valenstein 1979). No additional neurospychological tests were administered when evidence of cognitive difficulties on a basic test battery was lacking. Whenever questions about neuropsychological deficits arose, outside neuropsychological consultation was obtained.

The WAIS and Rorschach protocols of all 20 test batteries were coded and blindly and independently rescored by two research psychologists for the purposes of this study. The Rorschach records were rescored by

the two research psychologists according to Beck's criteria for scoring location, form level, content, and popular responses. Determinants of responses were scored according to the Klopfer, et al., system(1954), with only primary determinants included in summary scores. Thought disorder was evaluated according to Rappaport, Gill and Schafer's thought disorder list (1945, 1946). The scores for each response were considered one complete score. The two raters agreed on scores for 94.7% of the responses. The remaining scores were reconciled by discussion and consensus. The two research psychologists also independently reviewed the Rorschach and WAIS protocols of all records and assigned personality organization diagnoses. The test diagnoses of level of personality organization made separately by the two psychologists were in complete agreement.

An outside neuropsychologist blindly reviewed the entire records of all twenty subjects and made a final list of the neuropsychological deficits for all subjects in the two groups. The reviewing neuropsychologist felt that subtle language problems had been overdiagnosed on the records of two anorexia subjects so the more conservative estimate of deficits were used in this study.

DSM III Diagnoses

All the patients in this study were treated prior to the use of DSM III (1980). In order to provide more information about the kinds of character disorders in the two groups, DSM III Axis I and II diagnoses were assigned retrospectively approximately one year following patients' admissions to the hospital. Two senior clinicians, one of

whom had been a member of the original treatment team, reviewed the hospital charts of the conduct disorder patients and, by consensus, assigned DSM III diagnoses. Two other senior clinicans, both of whom had been involved in the treatment of the anorexia patients, reviewed the hospital treatment records and assigned DSM III diagnoses to that group.

RESULTS

See Table 2 for the DSM III diagnoses retrospectively assigned to the patients in both groups. The main finding is that neither group was homogeneous with regard to kind of personality disorder.

Cognitive Functioning

All ten anorexia patients functioned in the average range of intelligence or above, with four patients functioning in the Superior-Very Superior range of intellectual functioning (See Table 3). Despite this, significant intersubtest scatter was evident. The difference between the highest and lowest subtest scaled scores ranged from a difference score of five in one patient's record (the record with the most homogeneity of subtest scores,) to a difference score of 10 in two records. This indicates significant unevenness of cognitive functioning in this group.

Examination of subtest score patterns on the WAIS showed that nine of the ten anorexia patients had either Digit Span or Digit Symbol (Coding), or both, as their highest Verbal or Performance subtest score. This reflects a good ability to mobilize resources and to perform well in novel learning tasks, particularly those that involve the immediate

repeating back of information.

An unexpected finding was that seven of the ten anorexia patients earned relatively low scores on the Information subtest as compared with scores on the other Verbal subtests. Given that anorexia patients typically achieve at a high level in school, and given that they do well on immediate learning tasks, it is surprising that the majority of the anorexia patients had lowered performance on the subtest that taps fund of past or school-related learning.

The conduct disorder group was also selected so that all patients scored in the at least average range (See Table 3). It was noted that unevenness of cognitive functioning also exists in the conduct disorder group. The differences between highest and lowest subtest scaled scores in this group ranged from three to eight. Although some of the conduct disorder patients exhibited the pattern of performing better in new learning situations than in recall of past learning, this pattern occurred with less frequency than in the anorexia group. The average Performance IQ score for the conduct disorder group (110.3) was higher than was the group average Verbal IQ score (101.9) which suggests an action-orientation in this group. However, this pattern appeared significant in only five of the ten conduct disorder records. Overall no one cognitive style could be said to characterize the conduct disorder group.

Evaluation of neuropsychological deficits also revealed differences between the two groups (See Table 4 and 5). There was only one anorexia patient with verbal memory problems, and that patient's poorest verbal

subtest was not the Information subtest. This suggests that organic factors do not play a major role in the inability of anorexia patients to recall past learning efficiently. On the other hand, two of the three conduct disorder adolescents who have verbal memory difficulties performed worse on Information than on the other verbal subtests. In this group it seems that neuropsychological deficiencies may be associated with poor scores on the Information subtest. These findings suggest that different mechanisms may underlie similar-seeming learning patterns in the two groups.

Weaknesses in various neuropsychological functions were found in six of the ten anorexia records, but in only three of the ten conduct disorder records. Estimates of various learning difficulties in the United States range between 5% and 20% (Gottlieb et al., 1979). Given those estimates, both groups may have an overrepresentation of neuropsychological difficulties. However, the frequency of neuropsychological deficits in the anorexia group is especially high.

Personality Functioning

Both research psychologists independently assigned diagnoses of borderline personality to all test records of both groups. The main criteria for this diagnosis involved evidence of thought disorder on the relatively unstructured Rorschach, but adequate reality testing on the structured WAIS (Gunderson and Singer, 1975; Singer, 1977).

Many aspects of performance on the Rorschach were similar for the two groups. The anorexia group gave a slightly higher number of responses ($\bar{x}$ R=35) than did the conduct disorder group ($\bar{x}$ R=26.9) but

this difference was not significant (t= 1.33, NS). Both groups relied mainly on the form (F) of the blots (as opposed to color, etc.) to formulate responses (F=65% for anorexics, and 67.7% of conduct disorder patients; t= 0.04, NS). Also, the abilities of patients to produce form responses of good quality (F+), i.e., to produce responses that adhere to realistic attributes of the blots, was roughly equivalent in both groups (65% for anorexia patients, 74% for conduct disorder patients; t=0.58, NS). The groups were also not distinguishable in terms of the overall number of popular responses they gave (anorectics 23%; conduct disorder patients 24%; t=0.71, NS). Although estimates of Rorschach measures vary for adolescents, the frequencies of R and P responses, and the F% for both groups were roughly within normal limits. The F+% was on the low end of the acceptable range for both groups (Ames, et al., 1971; Beck, et al., 1961).

A sharp contrast between the two groups was evident when frequencies of poor form responses (F-) were compared. The F- responses scored here are those which are mainly form-based but which actually depart dramatically from any realistic assessemnt of attributes of the blots. Thus they are of clearly unacceptable quality. The anorexia patients gave more F- responses (31%) than did the conduct disorder group(22%; t= 2.2; $p < .05$). In fact, the form-dominated responses of the anorexia patients formed a bimodal distribution with some responses reflecting quite good form perception and others denoting marked deviations from realistic appraisal of stimuli. This finding suggests that there is significant unevenness in functioning in terms of ability to assess external reality in the anorexia group.

Both groups used whole blots (W) and common details (D) in formulating many responses, and the frequencies with which they utilized these areas of the blots fell within expected limits (Klopfer, et al., 1954; Beck, et al., 1961; Rappaport, et al., 1945, 1946). However, the anorexia patients also gave many more responses based on unusual details of blots (Dd%=30%) than did the conduct disorder patients (Dd =8.3%; t=41.2, $p < .001$). The frequency of Dd responses was within expected limits for the conduct disorder group only (Beck, et al., 1961). Dd responses include those based on highly defined but tiny details on edges of the blots, details carved out within shaded areas, and details in other arbitrary and ill-defined areas. Furthermore, it was noted that 79% of the anorectics' Dd responses involved form of unacceptable quality (F-). The conduct disorder group's use of Dd areas of the blots were also associated with a high number of F- responses (57%). However, it is the anorectic group's greater tendency to focus attention on smalland unusual details that underlies the relatively poorer reality testing in that group than in the conduct disorder comparison group.

Human movement (M) resposnes were present in nine of the anorexia records and in eight of the conduct disorder records. Only one patient in each of the two groups had poor form level on these responses (M-). In all other records all human movements responses were of good form (M+). Ordinarily human movement responses of good form level indicate good imagination, capacity to feel empathy with others, and ability to creatively engage in new experiences. However, only two of the anorexia patients and no conduct disorder patient produced five or more of these responses.

Five is the number that is considered optimal in terms of ability to use imagination in a creative process (Klopfer, et al., 1954). Also, close scrutiny of the M+ responses, including those of the two anorexia patients who gave five or more of these responses, showed that many of the responses produced involved sterotypic human actions in areas where it is unusual to fail to see human figures. Also, a high number of the M responses involved human-like forms (monsters, cartoon-characters, etc.). This suggests that the M+ responses in these records, which do not occur with optimal frequency, do not indicate the high level of ego functioning sometimes connected with these responses.

A comparison of the frequency of M responses with other structural determinants points to a failure to process outside events in terms of internal knowledge or feelings. For example, the use of color (C) in formulating responses on the Rorschach has been associated with emotionality and responsivity to external stimulation. The pattern of more C than M (C>M) responses is associated with impulsivity, greater reactivity to external than to internal events, and reaction to external stimulation that is not guided or modulated by more stable internal knowledge or rules. Eight of the ten anorexia patients and seven of the ten conduct disorder patients showed the pattern of more color than human movement responses.

The frequency of M responses was also compared to the number of whole (W) responses, i.e. responses in which the whole blot is taken into account in the formulation of responses. The presence of W responses of a significant number indicates organizational interest and ability, particularly with regard to attempts to make sense of disparate elements of reality by superimposing an overall structure or meaning. In this sense, W is related to efforts to apprehend experience and is connected

to an individual's aspirations. The W:M balance reflects the degree to which aspirations line up with the ability to mobilize creative energies to back up intellectual strivings and ambitions. Seven of the anorexia patients and ten of the conduct disorder had greater numbers of W than M (W>M) responses. This indicates another similarity between the two groups in terms of desire to succeed and to interact in the world, but a relative incapacity to bring inner resources to bear on attempts to function effectively.

Content analysis of the responses of both groups indicated that, from most to least frequent, content categories included animal, human, nature and object and implement responses. This frequency pattern is what is expected in this age group (Ames, et al., 1971), and is unremarkable. Also, the percentages of each content category were within the expected limits. Responses were also scored for other content qualities. Responses were evaluated as to whether they contained oral, anal, paranoid depressive, and symmetry images. These qualities were scored present or not for each response by the first author only, and so are considered only rough estimates of the prevalence of these kinds of images (See Table 6). Only very explicit examples were scored. For instance, oral imagery included mouths open, teeth biting, etc. Responses such as a person squatting were considered anal. Eyes piercing or staring were considered paranoid and trees broken and dying, or a person hanging down were scored as depressive. Symmetry responses included two people or animals who were described as pushed together or joined in some primitive way (not through a high level interaction), or single or paired people or animals viewing themselves in mirrors or bodies of water.

The frequencies of oral and anal images were not strikingly

different for the two groups, suggesting similarities in emotional concerns and kinds of developmental pathologies. Both groups also produced similar numbers of depressive images. However, the depressive responses of the anorexia patients were frequently followed by references to childish, happy or upbeat images. This mix of affective images was far less striking in the conduct disorder group. Instead more aggressive and powerful images tended to follow the depressive responses in the conduct disorder group. These patterns suggest that the two groups may utilize different defensive maneuvers to handle depressive affect.

The greatest differences between the groups involved the greater numbers of paranoid images and symmetry responses in the records of the anorexia group than in the records of the conduct disorder group. Although none of the anorexia patients could be considered paranoid clinically, the high number of paranoid images in their responses on the Rorschach indicates that there is a strongly vigilant quality to the perceptual style of these patients. This is in keeping with their focus on external values and underlies their good (although naive) grasp of rules of convention.

The number of symmetry responses on the Rorschach records of the anorectics was higher than the number of those responses on the records of the conduct disorder patients. Exner (1974) discussed symmetry responses (although he scores them less conservatively) as reflecting an interest in outside stimuli so as to find points of comparison for the self. This need for some comparative standard against which to judge and model the self again relates to the complaint stance of

patients with anorexia nervosa, and to their interest in referring mainly to external standards in evaluating experience and in planning behavior.

The presence of suicidal indicators such as color shading [(C)] and transparency responses [(B) FK] was also evaluated on the records of the two groups. These responses involve the use of shading in color, and the use of transparencies or cross-sections[b] in the formulation of responses. These responses have been shown to have occurred with high frequencies in records of patients who later committed suicide (Applebaum and Holzman, 1962; Applebaum and Colson, 1968; Blatt and Ritzler, 1974). A comparison of the prevalences of these indicators revealed that nine of the ten anorexia patients, but only three of the ten conduct disorder patients gave these pathologic responses (See Table 7).

Finally, there was an analysis of thought disorder in both groups. No serious thought disorder was evident on the WAIS protocols of either group. Only subtle indications of thought disorder (that did not reach psychotic proportions) were found on the WAIS records in both groups. This is in contrast to the blatant thought disorder that was evident on the more unstructured Rorschach. See Table 8 for frequencies of different kinds of thought-disordered responses for the two groups. No particular types of thought disorder appeared to be pathonomonic of either group.

DISCUSSION

No one cognitive style characterized the functioning of the conduct disorder group. The first finding of interest with regard to the cog-

nitive functioning of the anorexia group is that from the beginning of this investigation, the first ten consecutively-admitted anorectic patients could be included as subjects because they were all of average intelligence or above. This is in keeping with reports in the clinical literature (Bruch, 1979; Garfinkel and Garner, 1982; Palazzoli, 1963) and in psychological test literature (Theilgaard, 1965) that patients with this illness tend to be of average-above average intelligence. The finding that anorexia patients do well in novel learning situations was also not unexpected. Other authors (e.g. Bruch, 1979, 1982) have described anorexia patients as highly motivated and as able to apply themselves, particularly in structured learning situations.

An unexpected finding was that the anorexia patients as a group do relatively poorly in terms of recall of past or school-related learning as compared with their performance on novel learning tasks. This finding may be related to what Bruch (1979) had identified as a defect in conceptualization in these patients. Although there is some (at least fluctuating) capacity for abstract reasoning in this group, there seem to be difficulties in comprehension of how isolated facts fit together. Also lacking is the incorporation and integration of new learning into existing stores of information. Information can be repeated back quite well, but may be forgotten once situations involving evaluation and feedback are past. This "forgetting" most likely involves rote learning that includes no rehersal or elaboration of material beyond some short-term memory store, and where there is no integration into semantic, that is, more permanent memory (Craik and Lockhart, 1973; Klatzky, 1975).

It may be that external structure is necessary for mobilization of internal resources. But once external structure is withdrawn (and a task is over) no additional internal processing occurs that would make new knowledge one's own. The use of cognitive "control processes" such as rehearsal and elaboration of information (so information can be recalled at a later time) are typically automatically employed by adolescents. The anorectics' failure to use these strategies is reminiscent of the learning style of much younger children (Vail and Hagen, 1977).

A high number of subtle neuropsychological deficits were present in the records of both of the subject groups, but these were especially numerous in the records of the anorexia group. A recent study involving young conduct and adjustment disorder inpatient children (ages 7-12) showed that approximately one third of those children exhibited significant academic underachievement (Forness, et al., 1983). Underachievement was determined in relation to age and I.Q. The proportion of inpatient children with nonspecific learning problems reported in that study is equivalent to the porportion of conduct disorder adolescents in the present study who, despite at least average intelligence exhibited learning deficiencies. In comparison, the number of cognitive difficulties in the anorexia group was mugh higher.

Theilgaard (1965) had reported lowered intelligence in an older group of anorexia patients as compared with that of a group of young anorexia patients. Theilgaard had speculated that the lower I.Q. in the older group may have been the organic consequence of the much longer period of starvation in that group. The present findings suggest that

there are measurable cognitive deficiencies even in young anorexia patients. Other researchers (Halmi, 1980; Halmi, et al. 1979; Hamsher, et al., 1981; Wermuth, et al. 1977) have made reference to organic involvement in anorexia nervosa and in other eating disorders, particularly in severe cases of these illnesses. All the anorexia subjects in the present study were inpatients, and so they may all have had a severe form of this illness. Neurospychological deficits may be less prevalent in milder cases of anorexia. Also it must be emphasized that the neuropsychological evaluations in this study were based largely on clinical judgement regarding very small samples. Thus the findings here concerning the prevalence of cognitive deficits in anorexia patients must be considered preliminary. In addition, the meaning of the prevalence of neuropsychological deficits in patients with anorexia is not clear. It is not possible to determine whether there may be some weakness in the neurological system that contributes to the symptom choice of anorexia or whether neuropsychological deficits are the immediate or lingering effect of malnutrition.

All subjects in both groups exhibited lapses in the ability to test reality on the unstructured Rorschach test, but showed adequate ability to assess reality on the more structured WAIS. Thus all subjects were considered borderline according to psychological test criteria (Gunderson and Singer, 1975). Analysis of the responses that were scored as thought disordered on the Rorschach revealed that neither the kind nor the amount of thought disorder distinguished the functioning of the two groups. Only inspection of the percentages of poor form re-

sponses (F-) on the Rorschach indicated that the anorexia patients had relatively poorer ability to appraise reality as compared with the reality testing ability of the conduct disorder adolescents. Furthermore the relatively poorer reality testing that was exhibited was connected to the anorectics' tendency to focus on small and unusual details in unstructured situations.

Focus on unusual details has been associated with a need to retreat from dominant characteristics of situations in an attempt to maintain distance and equilibrium (Klopfer, et al., 1954). This perceptual style results when there is a reluctance to become immersed in experiences too deeply due to fears of being overwhelmed by more information and stimulation than one can handle. A focus on small details can be considered adaptive in that it serves the purpose of protection from feelings of being overwhelmed that are stirred up if one feels unable to rise to the challnege of organizing a mass of unstructured material. However, the expense of such withdrawal involves a reduced grasp of the meaning of events and their inherent complexities, and, as a result, forced and arbitrary responses. There was a clear association between a narrowing of attention and increasing arbitrariness in the present data.

Both groups were found to be highly reactive to external stimuli (C>M). This finding is not surprising with regard to the conduct disorder group whose members are characteristically reactive and impulsive. But, at least on the surface, it may seem contradictory to consider the more contained and proper behavior of anorexia patients as overreactive. However, some aspects of anorexia, such as bingeing and vomiting can

clearly be considered impulsive. Other aspects of anorexia, such as starvation itself, represent a massive effort at control, and may serve to bind the potential for acting-out in this group. One might also speculate that the compliant, achievement-oriented behavior typically presented by anorectics is the result of a reactivity to or focus on external standards, with a concomitant neglect of the processing of internal states and feelings (Bruch 1973, 1979). Both groups also gave evidence of having insufficient internal resources to fulfill their aspirations (low M and W>M).

Despite many similarities between the two groups, differences in defensive style between the groups were also noted. Already mentioned was the tendency of the anorectics to retreat to small and unusual details in order to cope with situations that have relatively little structure. In addition, the anorexia patients gave strong evidence of a vigilant style (paranoid images on the Rorschach) and an active interest in searching for standards of behavior outside the self (symmetry responses). The depressive responses of the anorexia patients were frequently followed by childlike happy and upbeat images. Depressive responses in the conduct disorder group more often were followed by aggressive and powerful images. These patterns suggest that the anorexia patients are more likely to resort to child-like denial and reversal of affect in order to gain distance from unpleasant affect. The conduct disorder group is more likely to move to an active, aggressive stance when made uncomfortable by similar feelings.

Also, one of the most striking findings in this study involves the high number of suicidal indicators on the Rorschach

in the anorexia group as compared with the conduct disorder group. The suicidal intent of the symptom of anorexia is rarely made explicit, and, in fact, is seldom consciously acknowledged by anorexia patients. Yet the mortality rate for this illness through both physiological sequellae of starvation and by actual suicide is conservatively estimated to be between 10 and 15% (Bruch, 1973;DSM III, 1980; See Garfinkel and Garner, 1982 for discussion). The prevalence of the suicidal indicators in the conduct disorder group is far lower. This is in spite of the fact that the behaviors of that group are characterized by many self-destructive acts. Although the behaviors of conduct disorder patients are frequently more anxiety-provoking, the mortality rate for that group is probably lower than that for the anorexia group (inferred from Vaillant and Perry, 1980). It may be that color shading and transparency responses are good discriminators of self-damaging acts that actually turn out to be more life threatening. Whether or not these kinds of responses turn out to be reliable suicide indicators, they may denote a potentially serious degree of self-destructiveness that may not always be apparent clinically.

A consideration of the cognitive processes that underlie the use of the suicidal indicators such as color shading and transparencies may be even more important. Color shading and transparency responses have been discussed as part of similar conceptual processes (Blatt and Ritzler, 1974). Both types of responses indicate an absorption in the self that is accompanied by an unusual degree of sensitivity to nuances of feelings, particularly dysphoric affects. Such near-sighted searching and focusing on immediate negative feelings leads to a loss of the sense of

time, especially the future, and its palliative effects (Applebaum and Holzman, 1962). Exner (1974) also has identified these responses as associated with a near-sighted preoccupation with the self that has a terrible negative yield. The degree of hopelessness and depression in these patients has not been adequately studied (see Hendren, 1983). More careful evaluation of the extent of depressive ideation in this group is crucial to improved psychological, and possibly pharmacologic treatment.

The results of this pilot study suggest that there are certain characteristic patterns of cognitive, neuropsychological and personality functioning in persons with anorexia nervosa. Future investigations in this area need to assess whether current findings are reflective of the functioning of larger and more varied groups of anorectic patients, or whether they are descriptive of only a select group of anorectics. In particular larger samples of carefully identified inpatients and outpatient anorectics need to be studied in order to determine whether there might be different and more mild and severe forms of this illness that are associated with different patterns of cognitive and emotional functioning.

Footnotes

[a] Target weights was determined for anorexia patients below age 19 by use of the NCHS Growth Charts (1976). The 50th percentile weights were calculated for patients' ages and heights and these were used as the target weights. For the 19-year-old anorectic subject in this study, the target weight was established by use of the Metropolitan Height and Weight Charts (1964). The lowest acceptable weight on those charts, corrected for height, was the target weight.

[b] Examples of (B)FK responses include those that involve seeing the inside and outside of objects at the same time, seeing objects under water, etc.

Table 1. Behavioral Characteristics of Anorexia Patients

	Patient #1	Patient #2	Patient # 3	Patient #4
Duration of Illness	1 year	6 months	8 months	18 months
Greatest Percent Below Target Weight	81	76	64.7	77.6
Number Previous Treatment Failures	1 Outpatient Failure	0	1 Hospitalized Failure	1 Outpatient Treatment Failure
Pregnancy and Delivery Complications	0	0	0	0
Bingeing	0	0	Several times per week	Several times per week
Vomiting	0	0	Several times per week	0
Stealing	0	0	0	0
Alcohol Abuse	0	0	Intoxicated q weekend	0
Laxative Abuse	0	0	Yes	Yes
Street Drug Abuse	0	0	Yes	0
Suicide Attempts	0	0	0	2 Overdoses
Follow-Up at One Year	Patient maintaining target weight and doing well	Patient maintaining target weight and doing well	Phone disconnected; unable to obtain follow-up	Patient bingeing and overweight. 120% of target. Depressed and socially isolated
Greatest Percent of Target Weight Prior to Illness	105	103	104	133

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Patient #5 6 months	Patient #6 8 months	Patient #7 5½ years	Patient #8 6 months	Patient #9 4 years	Patient #10 2½ years
78.7	91	70	83	67.5	62.2
1 Hospitalized Failure	1 Outpatient Treatment Failure	1 Hospitalized Treatment Failure	0	1 Outpatient Treatment Failure	5 Hospitalized Treatment Failures
0	0	0	Breech delivery +1 prolonged labor	0	1 month premature - mother on stilhesterol 5th month prenancy to term
0	0	0	0	3 times/week	several times/week
0	0	0	0	3 times/week	several times/day
0	0	0	0	0	from peers
0	0	0	0	0	0
0	Yes	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
Relasped, lost weight and rehospitalized	Maintaining weight and doing well	Maintaining weight-attending college, doing well.	Maintaining weight at 5% below target. Hysterical converstion symptoms	Maintaining weight at 20% below target. Continues to binge and vomit occasionally. Marginal social functioning.	Relasped - re-hospitalized.
108	147	100	120	76.6	117.8

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TABLE 2 DSM III DIAGNOSES

	Axis I	Axis II
Anorexia Patients		
#1	anorexia nervosa	deferred
#2	anorexia nervosa	deferred
#3	anorexia nervosa	borderline personality disorder
#4	anorexia nervosa	schizotypal personality disorder
#5	anorexia nervosa	avoidance personality disorder
#6	anorexia nervosa	deferred personality disorder
#7	anorexia nervosa	schizoid personality disorder
#8	anorexia nervosa	histrionic personality disorder
#9	anorexia nervosa	schzotypal personality disorder
#10	anorexia nervosa	borderline personality disorder
Acting-Out Patients		
#1	socialized, nonaggressive conduct disorder	dependent personality disorder
#2	unsocialized, aggressive conduct disorder	histrionic personality disorder
#3	socialized, nonaggressive conduct disorder	histrionic personality disorder and borderline personality disorder
#4	dysthymic disorder	depressive personality disorder and immature personality disorder
#5	bipolar disorder, depressed	borderline personality disorder
#6	dysthymic disorder	masochistic personality disorder and borderline personality disorder
#7	major depressive disorder	borderline personality disorder
#8	oppositional disorder	borderline personality disorder
#9	unsocialized, nonaggressive conduct disorder	schizoid personality disorder
#10	socialized, nonaggressive conduct disorder	borderline personality disorder

TABLE 3 WAIS AND WISC-R SCORES

	ANOREXIA PATIENTS										CONDUCT DISORDER PATIENTS									
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Age	13	18	17	16	17	13	19	11	18	15	17	15	14	19	18	16	17	15	15	14
Information	15	12	8	13	11	10	14	9	10	6	8	9	8	8	9	12	10	12	9	5
Comprehension	12	13	11	17	12	11	10	12	13	10	9	10	9	7	10	9	9	16	11	8
Arithmetic	13	8	11	13	12	13	10	11	11	8	10	9	11	6	12	12	8	8	7	7
Similarities	14	12	11	14	11	12	9	10	10	12	9	12	11	9	12	12	10	14	11	11
Digit Span	17	11	14	16	14	9	12	12	12	9	12	16	16	10	10	10	10	10	10	8
Vocabulary	12	11	11	14	12	11	13	10	12	8	6	9	8	8	11	11	10	10	9	7
Coding/Digit Symbol	14	17	9	13	16	17	10	12	9	16	10	10	12	11	9	12	9	10	14	13
Picture Completion	17	11	9	16	16	13	6	9	11	8	9	11	11	10	12	9	11	10	16	10
Block Design	18	9	10	11	12	14	7	8	14	6	14	11	12	6	15	9	7	11	9	12
Picture Arrangment	15	11	11	12	11	14	7	10	9	10	10	12	11	12	10	11	12	12	12	13
Object Assembly	17	10	9	11	14	15	5	8	13	12	8	13	11	13	13	10	9	11	15	11
Verbal IQ	119	111	110	132	117	108	111	102	111	96	99	110	96	91	109	111	100	112	96	95
Performance IQ	140	111	99	119	121	132	81	93	109	102	103	111	109	108	113	103	99	105	123	129
Full Scale IQ	135	111	106	128	120	122	98	98	110	99	101	111	102	96	112	108	99	109	109	111

TABLE 4 NEUROPSYCHOLOGICAL DEFICITS

	Anorexia Patients						Conduct Disorder Patients		
	#1	#6	#7	#8	#9	#10	#1	#9	#10
Attention	-	P	P	-	P	-	-	P	P
Sequencing	-	-	-	-	P	P	P	P	P
Syntactic Processing	P	P	P	-	-	P	P	P	P
Word-Finding	-	P	P	P	-	P	P	-	P
Visual-Motor Skills	-	-	P	P	-	P	-	P	-
Verbal Memory	-	-	P	-	-	-	P	P	P
Circumlocution	P	P	-	P	-	P	P	-	P
Perseveration	-	-	-	P	-	-	-	-	P
Organizational Ability	P	P	P	P	P	P	P	P	P
Spelling	*	*	-	*	*	*	-	*	-
Reading Single Words	-	-	-	-	-	*	-	*	-
Arithmetic	-	-	*	*	*	*	*	*	*

P - Deficits present in basic test batteries

* - Functioning at least two years below grade level as measured by The Wide Range Achievement Test (Jastak, et al. 1978)

PATIENTS NOT LISTED ABOVE HAD NO APPARENT NEUROPSYCHOLOGICAL DEFICIENCIES ON BASIC TEST BATTERIES

TABLE 5 ADDITIONAL NEUROPSYCHOLOGICAL DEFICITS

	Anorexia Patients						Conduct Disorder Patients		
	#1	#6	#7	#8	#9	#10	#1	#9	#10
Articulation	-	-	-	P	P	-	-	-	-
Finger Agnosia	-	-	-	-	P	-	-	-	-
Sound Blending	P	-	P	-	P	-	-	-	-
L-R Orientation	-	-	P	P	-	-	-	-	-
Auditory Discrimination	-	-	-	P	-	-	-	-	-
Visual-Perceptual Skills	-	-	P	P	P	P	-	-	-
Visual Memory	P	-	-	P	-	-	-	P	-
Receptive Language	-	P	P	P	-	P	-	-	-

P - Deficits present on additional tests. Not all Patients received all of the above listed neuropsychological tests (see text).

TABLE 6 FREQUENCIES OF OTHER CONTENT RESPONSES

	Anorexia Patients	Conduct Disorder Patients
Oral Images	26	17
Anal Images	12	8
Depressive Images	19	15
Paranoid Images	23	5
Symmetry Images	19	4

TABLE 7 SUICIDAL INDICATORS ON THE RORCHACH

	Color Shading	Transparencies
Anorexia Patients		
# 2	F(C)+, [F(C)+], [F(C)+], [(C)]	
# 3	(C)	
# 4	(C)F	(B)FK
# 5	F(C)-, [(C)f]	(B)FK
# 6	F(C)+, F(C)+, F(C)-, F(C)-, F(C)+	
# 7	F(C)+, F(C)-, F(C)-, F(C)-, F(C)+	(B)FK, (B)FK, B(FK), (B)FK
# 8	F(C)+, F(C)-	
# 9	F(C)+	
#10	F(C)+, [(C)]	
Conduct Disorder Patients		
# 3	F(C)+, (C)	(B)FK
# 4	(C)F	

Patients not listed had none of the above responses.

Responses in brackets were additional scores, not included in summary scores.

TABLE 8 THOUGHT DISORDER ON THE RORSCHACH

Anorexia Patients	Autistic Logic	Fabulations	Fabulized Combinations	Confabulations	Contaminations	Peculiar Language	Fluidity	Self-Reference
# 1		2				1		
# 2	1	2		2				
# 3		3			1	1		1
# 4	2	6	2	3	1	3	3	
# 5		2						
# 6	2	4		3		8	1	1
# 7	2	8	2	2	1	2	1	
# 8	1	2				1		1
# 9		2				4	1	
#10	1	2				1		
Σ	9	32	4	10	3	21	6	3

Conduct Disorder Patients								
# 1	1	2	1	2		1	3	1
# 2		4	1		1	1	1	
# 3		5		4		3	3	1
# 4		6	1	3	2	6		
# 5	1	9	1	3		1		
# 6		1	1			2		
# 7	1	5	2	3		1		2
# 8	3	5			1	2		2
# 9						1		
#10			2		1	2		
Σ	6	37	9	15	5	20	7	6

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